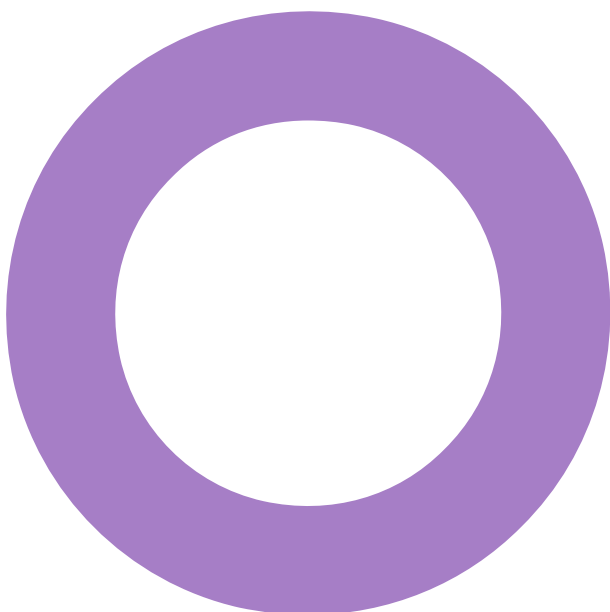


Stag Brewery.
London.
Reselton.

FIRE ENGINEERING
FIRE STRATEGY PLANNING STATEMENT

REVISION 07 - 24 MARCH 2022



Audit sheet.

Rev.	Date	Description of change / purpose of issue	Prepared	Reviewed	Authorised
00	21/05/2020	Fire strategy statement for planning	ES	MH	MH
01	29/05/2020	Fire strategy statement for planning	ES	MH	MH
02	14/07/2020	Minor updates to introduction wording	ES	MH	MH
03	01/02/2022	Updates to incorporate changes to scheme	ES	JA	MH
04	03/02/2022	Minor updates incorporating comments	ES	BR	MH
05	17/02/2022	Minor updates incorporating comments and updated masterplan layout	ES	IDL	MH
06	02/03/2022	Minor updates incorporating changes to Blocks 2, 18 & 19	ES	MH	MH
07	24/03/2022	Update to FSA figures to show parking positions	ES	MH	MH

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1. Introduction

This Fire Strategy Planning Statement has been prepared by Hoare Lea Fire Engineering on behalf of Reselton Properties Limited (“the Applicant”) in support of two linked planning applications (“the Applications”) for the comprehensive redevelopment of the former Stag Brewery Site in Mortlake (“the Site”) within the London Borough of Richmond upon Thames (LBRuT).

1.1 Proposals

The Applications seek planning permission for:

Application A:

“Hybrid application to include the demolition of existing buildings to allow for comprehensive phased redevelopment of the site:

Planning permission is sought in detail for works to the east side of Ship Lane which comprise:

- Demolition of existing buildings (except the Maltings and the façade of the Bottling Plant and former Hotel), walls, associated structures, site clearance and groundworks
- Alterations and extensions to existing buildings and erection of buildings varying in height from 3 to 9 storeys plus a basement of one to two storeys below ground
- Residential apartments
- Flexible use floorspace for:
 - Retail, financial and professional services, café/restaurant and drinking establishment uses
 - Offices
 - Non-residential institutions and community use
 - Boathouse
- Hotel / public house with accommodation
- Cinema
- Offices
- New pedestrian, vehicle and cycle accesses and internal routes, and associated highway works
- Provision of on-site cycle, vehicle and servicing parking at surface and basement level
- Provision of public open space, amenity and play space and landscaping
- Flood defence and towpath works
- Installation of plant and energy equipment

Planning permission is also sought in outline with all matters reserved for works to the west of Ship Lane which comprise:

- The erection of a single storey basement and buildings varying in height from 3 to 8 storeys
- Residential development
- Provision of on-site cycle, vehicle and servicing parking
- Provision of public open space, amenity and play space and landscaping
- New pedestrian, vehicle and cycle accesses and internal routes, and associated highways works”

Application B:

“Detailed planning permission for the erection of a three-storey building to provide a new secondary school with sixth form; sports pitch with floodlighting, external MUGA and play space; and associated external works including landscaping, car and cycle parking, new access routes and other associated works”

Together, Applications A and B described above comprise the ‘Proposed Development’.

1.2 Background to Submission

The Applications follow earlier planning applications which were refused by the Greater London Authority. The refused applications were for:

- Application A – hybrid planning application for comprehensive mixed use redevelopment of the former Stag Brewery site consisting of:
 - Land to the east of Ship Lane applied for in detail (referred to as ‘Development Area 1’ throughout); and
 - Land to the west of Ship Lane (excluding the school) applied for in outline (referred to as ‘Development Area 2’ throughout).
- Application B – detailed planning application for the school (on land to the west of Ship Lane).
- Application C – detailed planning application for highways and landscape works at Chalkers Corner.

The LBRuT (the Council) originally resolved to grant planning permission for Applications A and B but refuse Application C.

Following the LBRuT’s resolution to approve the applications A and B, the Mayor called-in the applications and became the determining authority. The Mayor’s reasons for calling in the applications were set out in his Stage II letter (dated 4 May 2020) but specifically related to concerns regarding what he considered was a low percentage of affordable housing being proposed for the Site and the need to secure a highways solution for the scheme following the LBRuT’s refusal of Application C.

Working with the Mayor’s team, the Applicant sought to meaningfully respond to the Mayor’s concerns on the applications. A summary of the revisions to the scheme made and submitted to the GLA in July 2020 is as follows:

- Increase in residential unit provision from up to 813 units to up to 1,250 units;
- Increase in affordable housing provision from (up to) 17%, to 30%;
- Increase in height for some buildings of up to three storeys;
- Change to the layout of Blocks 18 and 19, conversion of Block 20 from a terrace row of housing to two four storey buildings;
- Reduction in the size of the western basement, resulting in an overall car parking spaces reduction of 186 spaces and introduction of an additional basement storey under Block 1;
- Internal layout changes and removal of the nursing home and assisted living in Development Area 2;
- Landscaping amendments, including canopy removal of four trees on the north west corner of the Site; and
- Alternative options to Chalkers Corner in order to mitigate traffic impacts through works to highway land only and allow the withdrawal of Application C.

Application A was amended to reflect these changes.

Notwithstanding this, and despite GLA officers recommending approval, the Mayor refused the applications in August 2021.

The Mayor’s reasons for refusal in respect of Application A were:

- height, bulk and mass, which would result in an unduly obtrusive and discordant form of development in this ‘arcadian’ setting which would be harmful to the townscape, character and appearance of the surrounding area;
- heritage impact. The proposals, by reason of its height, scale, bulk and massing would result in less than substantial harm to the significance of several listed buildings and conservation areas in the vicinity. The Mayor considered that the less than substantial harm was not clearly and convincingly outweighed by the public benefits, including Affordable Housing, that the proposals would deliver;
- neighbouring amenity issues. The proposal, by reason of the excessive bulk, scale and siting of Building 20 and 21 in close proximity to the rear of neighbouring residential properties in Parliament Mews and the rear gardens of properties on Thames Bank, would result in an unacceptable overbearing and unneighbourly impact, including direct overlooking of private amenity spaces. The measures in the Design Code would not sufficiently mitigate these impacts; and
- no section 106 agreement in place.

Application B was also refused because it is intrinsically linked with Application A and therefore could not be brought forward in isolation.

1.3 The Proposed New Scheme

This 3rd iteration of the scheme seeks to respond directly to the Mayors' reasons for refusal and in doing so also addresses a number of the concerns raised by the LBRuT.

The amendments can be summarised as follows:

- A revised energy strategy is proposed in order to address the London Plan (2021) requirements;
- Several residential blocks have been reduced in height to better respond to the listed buildings along the Thames riverfront and to respect the setting of the Maltings building, identified as a Building of Townscape Merit (BTM) by the LBRuT;
- Reconfiguration of layout of Buildings 20 and 21 has been undertaken to provide lower rise buildings to better respond to the listed buildings along the Thames riverfront; and
- Chalkers Corner light highways mitigation works.

The school proposals (submitted under 'Application B') are unchanged. The Applicant acknowledges LBRuT's identified need for a secondary school at the Site and the Applications continue to support the delivery of a school. It is expected that the principles to be agreed under the draft Community Use Agreement (CUA) will be the same as those associated with the refused school application (LBRuT ref: 18/0548/FUL, GLA ref: GLA/4172a/07).

Overall, it is considered that together, the Applications respond successfully to the concerns raised by the GLA which also reflect some of the concerns raised by stakeholders in respect of the previous schemes and during pre-application discussions on the revised Proposed Development. As a result, it is considered that the scheme now represents a balanced development that delivers the principle LBRuT objectives from the Site.

This fire safety statement has been prepared by Hoare Lea to accompany the planning application for the Stag Brewery development in London and address The London Plan (March 2021) Policy D5 (Inclusive Design) and D12 (Fire Safety).

The intention of this fire safety statement is to address the main fire safety principles and provide an overview of the requirements and recommendations that the scheme will meet. It is noted that several buildings in the scheme can be classified as relevant buildings under planning gateway one. This document does not include the fire statement form however, this is provided as a separate document by Hoare Lea.

The design of the development requires compliance with the Building Regulations 2010 (as amended) and the objective of this fire safety strategy report is to meet the fire safety requirements of Schedule 1 of Part B of the Building Regulations. It is proposed to meet these requirements by designing the buildings in accordance with BS 9991:2015 (for residential) and BS 9999:2017 (for non-residential). For the hotel, Approved Document B:2019 (with 2020 amendments) (ADB) will be utilised. The school will be designed to the requirements listed in BB100; other guidance documents, e.g. BR 187 will be used where appropriate.

Alternative solutions are acceptable, provided that the functional requirements of the Building Regulations can be demonstrated to have been met. Where necessary and where prescriptive compliance with statutory guidance cannot be achieved a fire engineering approach has been adopted, in order to comply with the Building Regulations, to compensate for instance for the extended travel distances and any other deviations from the guidance documents.

2. The London Plan Policy D12 (Fire Safety).

The London Plan – Policy D12 states that in the interests of fire safety and to ensure the safety of all building users, all development proposals must achieve the highest standards of fire safety and ensure that they:

1. Identify suitably positioned unobstructed outside space:
 - a. For fire appliances to be positioned on
 - b. Appropriate for use as an evacuation assembly point

2. Are designed to incorporate appropriate features which reduce the risk to life and the risk of serious injury in the event of a fire; including appropriate fire alarm systems and passive and active fire safety measures;
3. Are constructed in an appropriate way to minimise the risk of fire spread;
4. Provide suitable and convenient means of escape, and associated evacuation strategy for all building users;
5. Develop a robust strategy for evacuation which can be periodically updated and published, which all building users can have confidence in; and
6. Provide suitable access and equipment for firefighting which is appropriate for the size and use of the development.

All major development proposals should be submitted with a Fire Statement, which is an independent fire strategy, produced by a third party suitably qualified assessor. The statement should detail how the development proposal will function in terms of:

1. The building's construction: methods, products and materials used, including manufacturers details;
2. The means of escape for all building users: suitably designed stair cores, escape for building users who are disabled or require level access, and the associated evacuation strategy approach;
3. Features which reduce the risk to life: fire alarm systems, passive and active fire safety measures and associated management and maintenance plans;
4. Access for Fire Service personnel and equipment: how this will be achieved in an evacuation situation, water supplies, provision and positioning of equipment, firefighting lifts, stairs and lobbies, any fire suppression and smoke ventilation systems proposed, and the ongoing maintenance and monitoring of these;
5. How provision will be made within the site to enable fire appliances to gain access to the building; and
6. Ensuring that any potential future modifications to the building will take into account and not compromise the base build fire safety/protection measures

These items will be addressed in the following sections for the Stag Brewery development.

3. Competency statement.

All Hoare Lea design projects are headed by highly trained engineers, supported by a team of chartered engineers across the UK, with proven experience on a wide range of fire safety consultancy projects.

Our staff have appropriate expertise and experience of fire safety design on a wide range of complex buildings, not only in the UK, but also world-wide. Whilst most of our work is conducted to satisfy safety regulations within the UK (e.g. Building Regulations and associated legislation), our staff have been responsible for developing fire safety strategies based on the National Fire Protection Association (NFPA) standards and other international codes.

This statement has been produced, reviewed and approved by the following key individuals. The design and development of the fire safety strategy will be undertaken by the same individuals.

- Miller Hannah BEng (Hons), CEng, MIFireE – Director
- Johan Askman BSc, MSc, AIFireE – Associate
- Eric Swainson MEng (Hons), AIFireE – Principal Fire Engineer

4. Development description.

The full development consists of a total of twenty-three standalone blocks, these are divided into nine mixed use residential blocks with flexible space on the ground level, eleven standalone residential blocks, an office/cinema, a school and a hotel/office. The top occupied storey of each of the blocks is highlighted below in Table 1, the height of the top occupied storey has been provided by Squire & Partner Architects.

Table 1: Building heights

Block No.	Use	No. of storeys (including ground)	Height of top occupied storey (m) ^{Note 1}	
1	Cinema/office	4	14.8	
2	Residential with flexible space at ground	9	27.8	
3	Residential	7	17.5	
4	Residential with flexible space at ground	8	24.4	
5	Hotel and office	3	8.6	
6	Residential with flexible space at ground, including energy plant	5	15.1	
7		9	27.8	
8		9	27.4	
9		5	15.7	
10		7	21.5	
11		8	24.1	
12		8	24.1	
13		Residential	6	19.0
14			6	19.0
15			8	27.0
16			6	19.0
17	7		23.6	
18	6		19.0	
19	4		13.0	
20	3		9.4	
21	3		9.4	
n/a	School	3	<18	

Note 1: For blocks 13-21 are currently designed as outline only and do not yet have set floor levels. As such the height of the top occupied storey has been assumed based on 3m below the parapet height provided by Squire & Partner Architects.

Figure 1 gives an overview of the block numbers corresponding to those within Table 1 above.

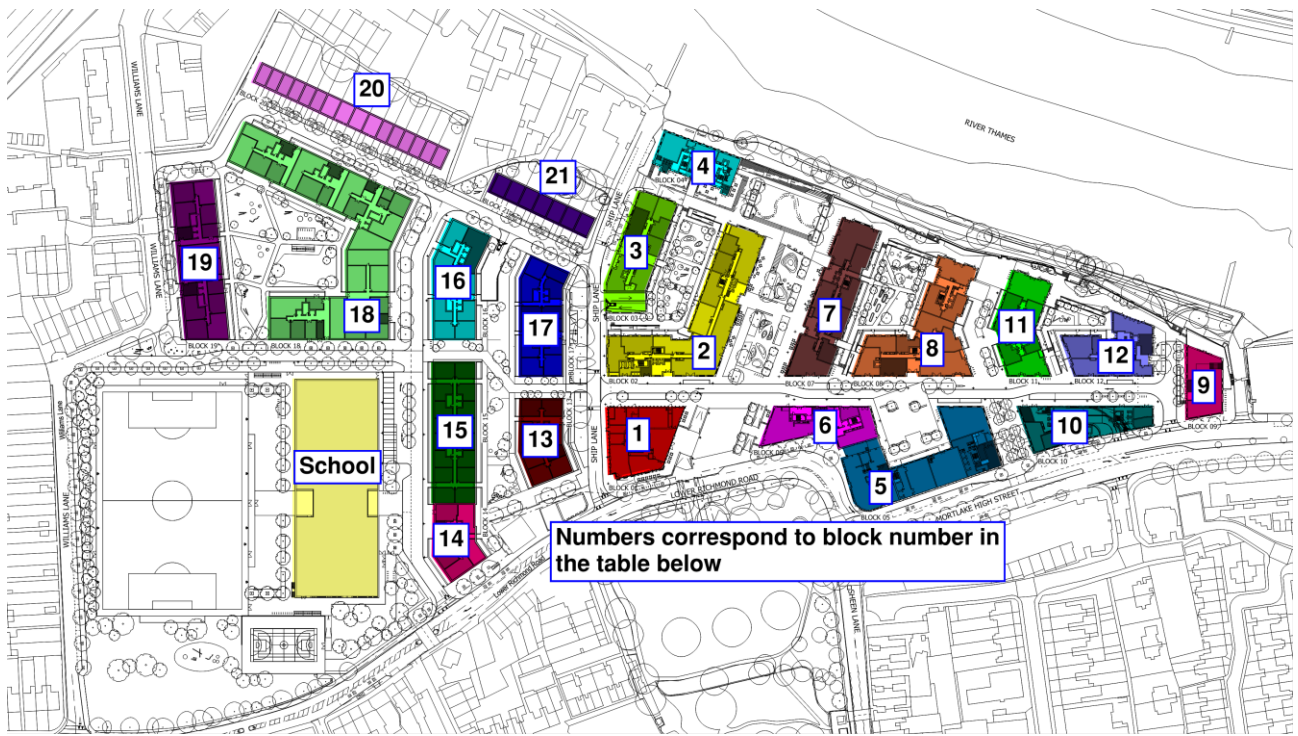


Figure 1: Proposed Stag Brewery Site Numbering Plan.

5. Fire safety overview.

5.1 Building construction

The exact construction method has not been defined at the time of writing this fire strategy planning statement but it will consist of traditional construction.

The buildings will be constructed with concrete cores and the fire resisting partitions between apartments and common corridors will be provided via fire resisting plasterboard panels.

To limit the spread of fire within the buildings, all wall and ceiling linings will satisfy the appropriate classification stated within BS 9991:2015, BS 9999:2017 and ADB Volume 2:2019 for internal linings in the residential, commercial and hotel areas respectively.

The RIBA Stage 2 fire safety strategy will include a space separation analysis to establish the necessary boundary distance around each building and whether any fire protection to the external façade is required. At this stage, no significant risk of spread of fire between buildings has currently been identified; however, detailed analysis will be provided during the RIBA Stage 2 design stage and the appropriate fire resisting construction will be provided.

In accordance with Regulation 7(2) of the Building Regulations, each residential block which has a storey height in excess of 18m above the lowest adjacent external ground level (Blocks 2, 4, 7-8, 10-18), the external wall construction, and specified attachments including balconies, solar shading or solar panels, will achieve European Classification A2-s1, d0 or Class A1. Where multiple blocks are connected by a shared basement carpark or podium and one of those blocks has a storey height in excess of 18m all connected blocks should be designed to meet the requirements of Regulation 7(2). There are two carparks proposed for the scheme and as such in addition to those blocks described above Blocks 3, 6 as they connect to blocks over 18m via the carpark.

The cinema/office and hotel/office buildings do not have a storey that exceeds 18m in height and, therefore, either the external walls should satisfy the performance criteria described in BRE report BR 135 or the external wall surface should be in accordance with Table 12.1 of Approved Document B Volume 2 for surface spread of flame classification, and cavity barriers in any external wall cavity are required in accordance with Section 9 of the Approved Document.

Note: In practice, it may be necessary for external surfaces to achieve a Class B-s3, d2 or better (European Classification) surface spread of flame classification to avoid the walls contributing to the space separation (unprotected areas) calculations.

Full reference should be made to the guidance provided in Approved Document B regarding recommendations for external walls.

The school building does not have a storey that exceeds 18m in height and, therefore, either the external walls should satisfy the performance criteria described in BRE report BR 135 or the external wall surface should be in accordance with Table 13 of BB 100 for surface spread of flame classification, and cavity barriers in any external wall cavity are required in accordance with Section 7.2.4.1 of BB 100.

Note: In practice, it may be necessary for external surfaces to achieve a Class B-s3, d2 or better (European Classification) surface spread of flame classification to avoid the walls contributing to the space separation (unprotected areas) calculations.

In addition, for property protection purposes, combustible cladding should be avoided at ground floor level.

Full reference should be made to the guidance provided in BB 100 regarding recommendations for external walls.

5.1.1 Construction, design and management regulations

Design projects undertaken in the UK are subject to the requirements of the Construction (Design and Management) Regulations 2015 (CDM Regulations), the objective of which is to ensure that health and safety

issues are properly considered during a project's design and development so that the risk of harm to those who have to construct, use and maintain the building is reduced.

As a designer, in accordance with Regulation 9 of the CDM regulations, Hoare Lea have taken into account the general principles of prevention in the preparation of this report and where reasonably practicable, eliminate, minimise and/or control foreseeable hazards associated with the design. Where elimination is not reasonably practicable, Hoare Lea will be required to provide 'pre-construction' information in respect of any significant and/or unusual project-specific hazards that remain.

5.2 Means of escape provisions

It is proposed to adopt a 'stay put' evacuation strategy for the residential floors of each of the blocks. That is, only the occupants of the apartment of fire origin will evacuate on activation of the fire detection and alarm system. The occupants of other apartments will remain in place, protected by a high level of compartmentation, unless they choose to escape or are instructed otherwise by the fire and rescue service. The residential amenity spaces and flexible spaces will adopt a simultaneous evacuation strategy.

The cinema/office, hotel/office and school areas will operate a simultaneous evacuation strategy. That is, upon activation of the fire detection and alarm system, all occupants in the building will evacuate immediately and simultaneously.

5.2.1 Residential

The apartment layouts are proposed to be a mix of open plan and protected entrance hall design. and the open plan apartments can be designed based on the following principles.

- Open-plan flats do not have a protected entrance hall but have bedrooms that are inner rooms and are accessed directly from the living room or kitchen. In accordance with BS 9991:2015, open-plan apartments should be provided with a Grade D2 Category LD1 fire detection and alarm system in accordance with BS 5839-6:2019 and a residential sprinkler system designed to BS 9251:2021. The open-plan flats should meet the following recommendations:
 - The size of the open-plan flat should not exceed 16m x 12m if the kitchen is enclosed separately;
 - The size of the open-plan flat should not exceed 8m x 4m if the kitchen is not enclosed;
 - Open-plan flats should be situated on a single level only; and
 - The ceilings should have a minimum height of 2.25m
- However, it is also proposed to have apartments that exceed the maximum size recommended in BS 9991:2015 for an open plan design. A fire engineered solution supported by a Computational Fluid Dynamics (CFD) analysis will be required to justify the apartments layouts. This would need to be discussed and agreed with the Approving Authorities.

The protected entrance hall apartments will be designed in accordance with Section 9.4 of BS 9991:2015.

Several multi-level apartments are also proposed for the building, these apartments will be designed in accordance with Section 9.5 of BS 9991:2015. Currently some of these duplex apartments are proposed to also be provided with galleries. These gallery levels will be designed in accordance with Section 9.6 of BS 9991.

The final exit from the stairs will lead directly to the outside via a protected passageway to the outside. The protected passageway will be treated as an extension of the stairs provided with the same standard of fire protection (i.e. fire resistance and smoke ventilated lobby protection). The protected passageway will be at least as wide as the stairs and any apartments located off this passageway will be accessed via a smoke ventilated lobby. If this protected passageway forms a reception area for the residential buildings this reception area will be kept sterile and free from combustibles at all times.

Where flexible spaces are provided at ground level means of escape from these areas will be provided independently from the residential means of escape. There will be no communication between the residential means of escape routes and flexible spaces.

The travel distances in some blocks in a single direction in the common corridors will be limited to 15m with all residential common corridors proposed to be provided with either a natural or mechanical smoke ventilation system. All of the stairs will be provided with a head of stair AOV with 1.0m² free area at the top of their enclosure and all residential apartments will be provided with residential sprinklers. It is understood that most blocks are provided with a single stair, however, the travel distance where multiple directions of escape are available should be limited to 60m. It is noted that in some blocks the 15m travel distance in a single direction is exceeded, up to a maximum of 25m. A fire engineered arrangement will need to be adopted in these blocks consisting of two mechanical smoke ventilation extract shafts, known as a Double Reversible Mechanical Extract (DRME). This system will be justified by means of a CFD analysis at a later stage when the internal corridor layouts are set. This is to be discussed and agreed with the Approving Authorities.

Furthermore, one lift per block will be provided as a lift with enhanced facilities for evacuation to facilitate the evacuation of mobility impaired occupants and meet the recommendations of Policy D5 (inclusive design) of the London Plan. In order to facilitate the use of the evacuation lift all of the residential stairs should be provided with refuge spaces with minimum dimensions of 900mm x 1400mm outside of clear escape width of the stair. The refuge should be provided with an emergency voice communication (EVC) system, designed and installed in accordance with BS 5839-9:2011. The management procedures of the evacuation lifts will be developed during the design stage.

There will not be communication between the residential escape routes from the levels above and the escape routes from any flexible space at Ground Level.

As the residential buildings are proposed to operate on a 'stay put' evacuation policy only a single person/family would be evacuating the building at a time. On this basis the occupants of the fire apartment are expected to wait outside of the building and do not need to be assigned a dedicated assembly point.

5.2.2 Hotel/Office

It is recommended that an automatic detection and alarm system is installed to a L1 standard in accordance with BS 5839-1:2017.

Escape travel distance within hotel corridors will be limited to 9m in a single direction and 35m where two directions are available.

As the top occupied storey of the hotel is in excess of 11m all hotel accommodation levels will be served by a minimum of two means of escape stairs.

The means of escape from the hotel will be simultaneous with the office accommodation in the same block.

The final escape route from each stair will lead directly to outside or via fire sterile corridor afforded the same level of fire resistance as the stair itself as described above for the residential final escape routes.

The office areas of the block will be designed as described below (in Section 5.2.3) as the office in Block 1.

Suitable assembly point locations should be selected and managed by the building management. These locations should be positioned such that they don't put building occupants at risk from emergency vehicles attending the scene. It is understood that a staff member is present in the building at all times and, as such, the staff members should be familiar with the location of the assembly point and be able to direct occupants to this location. Areas where potential assembly points could be located are highlighted in yellow in Figure 2 and Figure 3.

5.2.3 Office and Cinema

The cinema and office will be designed in accordance with BS 9999. The risk profiles given in Table 2 will be assigned for each of these areas.

Table 2: Summary of risk profiles.

Purpose area	Occupancy characteristic	Fire growth rate	Sprinkler protection	Risk profile
Office	Awake and familiar (A)	Medium (2)	No	A2
Cinema	Awake and unfamiliar (B)	Medium (2)	No	B2

It is proposed to provide a Category L2 fire detection and alarm system in accordance with BS 5839-1:2017 throughout the building. This is to provide an early warning of fire to initiate the evacuation. This is considered to be an enhancement compared to the Manual system that is recommended as a minimum for buildings with a Risk Profile A2.

The maximum recommended travel distances for each area are specified in Table 3, as per BS 9999. The internal layout should take consideration of the recommended travel distances listed below.

Table 3: Maximum recommended travel distances.

Risk profile	Actual travel distances [m]	
	Single direction	Multiple directions
A2	25.3 ^{Note 1}	63.2.7 ^{Note 1}
B2	23.0	57.5

Note:

- These are the maximum distances specified with considering additional benefits of automatic fire detection, i.e. 15% increase in travel distances.
- Should the interior layout not be shown, 2/3 of the travel distances should be applied as the maximum direct travel distances.

As the top occupied storey is proposed to be over 11m it is recommended that the upper levels are provided with one protected escape stair and one firefighting stair. It is recommended that these stairs are at least 1100mm wide and any storey exits leading into the stair are provided with a minimum clear width of at least 1050mm.

It is proposed to provide a disabled refuge on all escape routes where level egress to the outside is not available. This can be provided either within the stair or lobby enclosure. The refuge spaces should have the following minimum dimensions: 1400mm by 900mm. The refuge should be provided with an emergency voice communication (EVC) system, designed and installed in accordance with BS 5839-9:2011.

The final escape route from each stair will lead directly to outside or via fire sterile corridor afforded the same level of fire resistance as the stair itself as described above for the residential final escape routes.

Suitable assembly point locations should be selected and managed by the building management. These locations should be positioned such that they don't put building occupants at risk from emergency vehicles attending the scene. It is understood that a staff member is present in the building at all times when the building is occupied and, as such, the staff members should be familiar with the location of the assembly point and be able to direct occupants to this location. Areas where potential assembly points could be located are highlighted in yellow in Figure 2 and Figure 3.

5.2.4 School

It is proposed to provide a Category L2 fire detection and alarm system in accordance with BS 5839-1:2017 throughout the building.

The maximum recommended travel distances for each area are specified in Table 3, as per BB100.

Table 4: Maximum recommended travel distances.

Area	Actual travel distances [m]	
	Single direction	Multiple directions
Areas of special fire hazard ^{Note 1}	9	18
Seating in rows	15	32
Other areas	18	45
Note: 1. These are defined as: boiler rooms, storage spaces for fuel or other highly flammable materials, lab spaces, technology rooms with open heat sources, kitchens, oil filled transformer and switchgear rooms and rooms housing fixed internal combustion engines, cloakrooms. 2. Should the interior layout not be shown, 2/3 of the travel distances should be applied as the maximum direct travel distances.		

It is understood that the school will be provided with a minimum of two protected means of escape stairs serving every level. These stairs will be provided with a protected lobby separating them from the accommodation on every level. The minimum clear width of the escape stair should be 1100mm, however, this may be increased to increase the number of persons accommodated by the stair.

It is proposed to provide a disabled refuge on all escape routes where level egress to the outside is not available. This can be provided either within the stair or lobby enclosure. The refuge spaces will have the following minimum dimensions: 1400mm by 900mm. Emergency voice communication (EVC) systems will be provided next to the refuge areas as described above for the office accommodation.

The final escape route from each stair will lead directly to outside or via fire sterile corridor afforded the same level of fire resistance as the stair itself as described above for the residential final escape routes.

Suitable assembly point locations should be selected and managed by the building management. These locations should be positioned such that they don't put building occupants at risk from emergency vehicles attending the scene. It is understood that a staff member is present in the building at all times when the building is occupied by students and, as such, the staff members should be familiar with the location of the assembly point and be able to direct students to these location(s). Areas where potential assembly points could be located are highlighted in yellow in Figure 2 and Figure 3.

5.2.5 Carpark

A Carpark will be located below and connected to blocks 2, 3, 6, 7, 8, 11 & 12. A second carpark will be located below and connected to blocks 13, 15, 16 & 17.

The carparks will operate on a simultaneous evacuation strategy independent from the residential levels above. A Category L2 fire detection and alarm system in accordance with BS 5839-1:2017 will be provided throughout the carparks.

The carpark will be designed as ancillary to the residential levels served above and as such the travel distances should meet the following travel distance limits.

Maximum recommended travel distances.

Area	Actual travel distances [m]	
	Single direction	Multiple directions
Carpark	18	45
Note:		

Area	Actual travel distances [m]	
	Single direction	Multiple directions
1. Should the interior layout not be shown, 2/3 of the travel distances should be applied as the maximum direct travel distances.		

The stairs serving the carpark will be separated from the stairs serving the levels above via fire resisting construction.

The final escape route from each stair will lead directly to outside or via fire sterile corridor afforded the same level of fire resistance as the stair itself as described above for the residential final escape routes.

5.3 Features incorporated to reduce the risk to life

A grade D2 LD1 fire detection and alarm system designed and installed in accordance with BS 5839-6:2019 will be provided in all apartments.

Non-residential areas will be provided with a category L2 fire detection and alarm system in accordance with BS 5839-1:2017 throughout. The exception to this will be the hotel which will be provided with a category L1 fire detection and alarm system in accordance with BS 5839-1:2017.

All residential blocks (including 20 and 21 which are under 11m) will be provided with a residential sprinkler system to BS 9251:2021. In blocks under 18m this will be a category 2 system, whereas in blocks over 18m this will be designed as a category 4 system. Furthermore, where a category 2 system is installed it is recommended that duty/standby pumps are provided with secondary power supplies provided to ensure the robustness of the system. In all residential blocks non-residential areas will be provided with a commercial sprinkler system designed to BS EN 12845:2015. This system should be designed to include the measures to improve system reliability and availability described in Annex F of BS EN 12845.

A commercial sprinkler system will also be provided in the school designed and installed in accordance with BS EN 12845:2015.

Blocks 1 and 5, the cinema/office and hotel/office are not currently proposed to be provided with a sprinkler system due to the height of these blocks.

It is recommended that the development should have management on site 24/7. This could be provided via a fire control centre that covers the whole development. If the fire control centre is provided the alarm system for each block should be linked to the fire control centre and management will be present to assist evacuation if required.

It is recommended that Emergency voice communication devices will be provided within each stair core (in both residential and non-residential stairs) at all levels to contact management in case of an emergency.

Each of the carparks will be provided with a smoke ventilation system designed in accordance with BS 7346-7:2013.

Smoke ventilation will be provided to the residential common corridors as described in Section 5.3

Each member forming part of the structural frame of the building or any other beam or column will be provided with the following fire resistance, based on the height of each block.

Table 5: Fire resistance of elements of structure

Block	Use	Height [m] ^{Note 1}	Fire resistance of elements of structure [minutes]
1	Cinema/office	<18	60

Block	Use	Height [m] ^{Note 1}	Fire resistance of elements of structure [minutes]
3, 6, 9, 19, 20, 21	Residential	<18	60
5	Hotel and office	<18	60
2, 4, 7, 8, 10-18	Residential	>18	90
School		<18	60

The stairs will be enclosed in fire resistant construction equivalent to the elements of structure. Where firefighting stairs are provided these will be provided with 120 minutes fire resistance. The corridor and apartments will be enclosed in 60 minutes fire resistance construction.

5.4 Fire-fighting access within the building

All blocks (both residential and non-residential) with a top occupied storey 18m above fire service access level will be provided with firefighting shafts. The fire-fighting shafts will comprise of:

- A fire-fighting stair at least 1100mm clear width;
- A fire-fighting lift;
- A fire main with an outlet at all levels;
- A ventilated common corridor;
- 120 minutes fire resistance enclosure around the fire-fighting stair and lift;
- 60 minutes fire resistance construction between fire-fighting stair and lift; and
- An AOV with at least 1.0m² free area at the top of the stairs.

In addition, block 1 (cinema/office) will also be provided with a firefighting shaft as described above as it has a B2 risk category and top storey above 7.5m above fire service access level.

All residential blocks, where the 45m hose laying distance from the fire tender parking position is not achieved, will be provided with a dry riser main. Coverage from the dry main outlet will be provided in order to achieve a hose laying distance of 45m (or 60m from a firefighting core) to all parts of the floorplate on a route suitable for laying hose.

Suitable dry fire mains will be provided within a protected stair lobby within the cinema/office, hotel/office and school such that all areas of the floorplate can be reached within 45m or 60m from a firefighting core.

Furthermore, the design team will consider additional evacuation control measures such as providing facilities for simultaneous evacuation and mobility impaired evacuation via lifts in case a fire becomes out of control.

Where basements are provided which are greater than 3m in depth or in excess of 200m² they will be provided with basement smoke ventilation in accordance with the recommendations in BS 9999, BS 9991 and ADB Volume 2. All basement carparks will be provided with smoke ventilation in accordance with BS 7346-7.

5.5 Fire-fighting access to the building

Access for the Fire Service will be provided at Ground Floor for each separate block. A suitable parking position will be provided within 18m of the fire main inlet in each block, the distance from the inlet to the firefighting core will be provided within 18m internally.

All access routes shown in Figure 2 will meet the specifications for the pumping appliance listed in Table 12 below.

Table 6: Road specifications for pumping appliance access

Appliance type	Min. width of road between kerbs [m]	Min. width of gateways [m]	Min. turning circle between kerbs [m]	Min. turning circle between walls [m]	Min. clearance height [m]	Min. carrying capacity [t]
Pump	3.7	3.1	16.8	19.2	3.7	14 ^{Note 1}
High Reach	3.7	3.1	26.0	29.0	4.27	32 ^{Note 2}

Note 1: 12.5 tonnes in accordance to ADB; however, 14t in accordance with the LFEPA Fire safety guidance Note, Access for Fire Appliances, GN29 [13].

Note 2: 17 tonnes tonnes in accordance to ADB; however, 32t in accordance with the LFEPA Fire safety guidance Note, Access for Fire Appliances, GN29 [13].

Hydrants will be provided within 90m of the fire service parking positions.

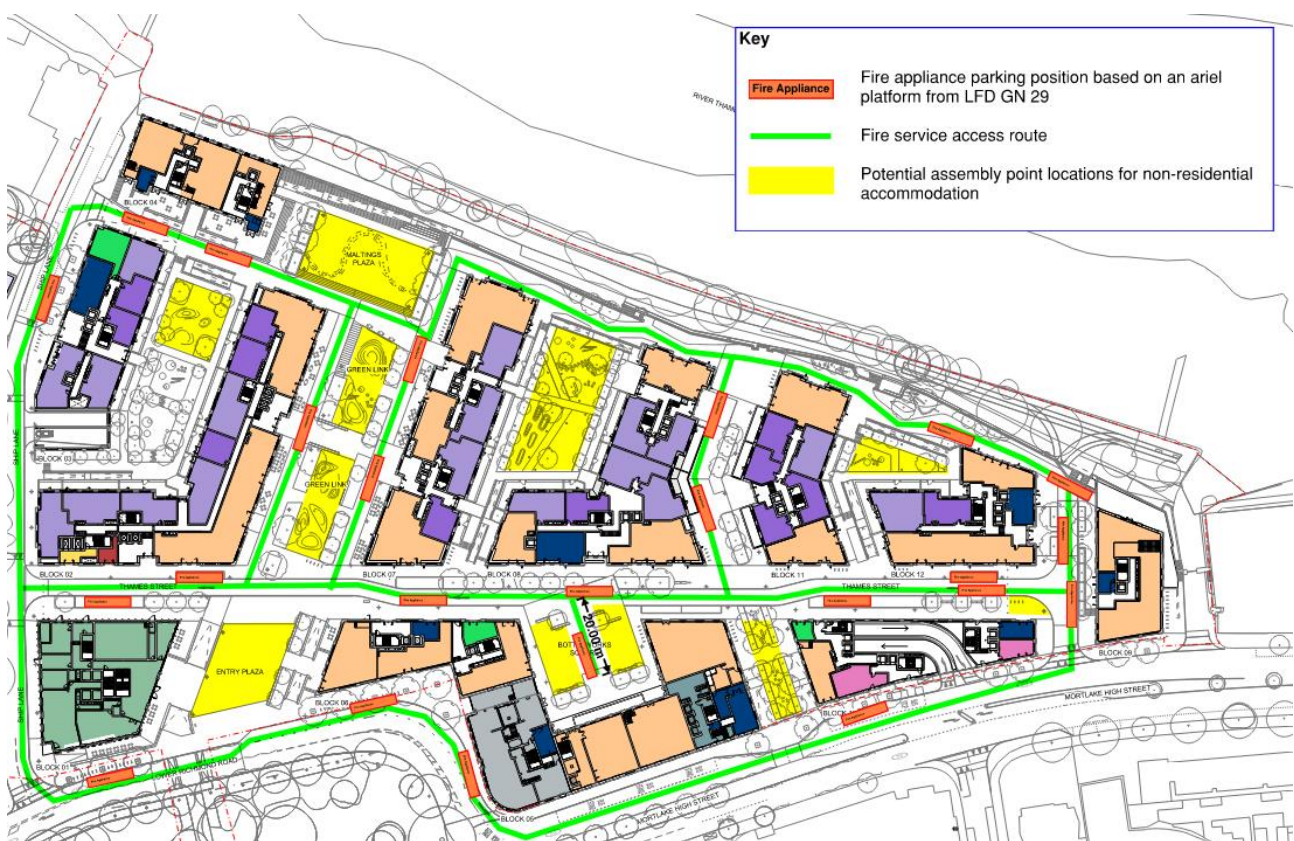


Figure 2: Fire service access around the proposed development area 1

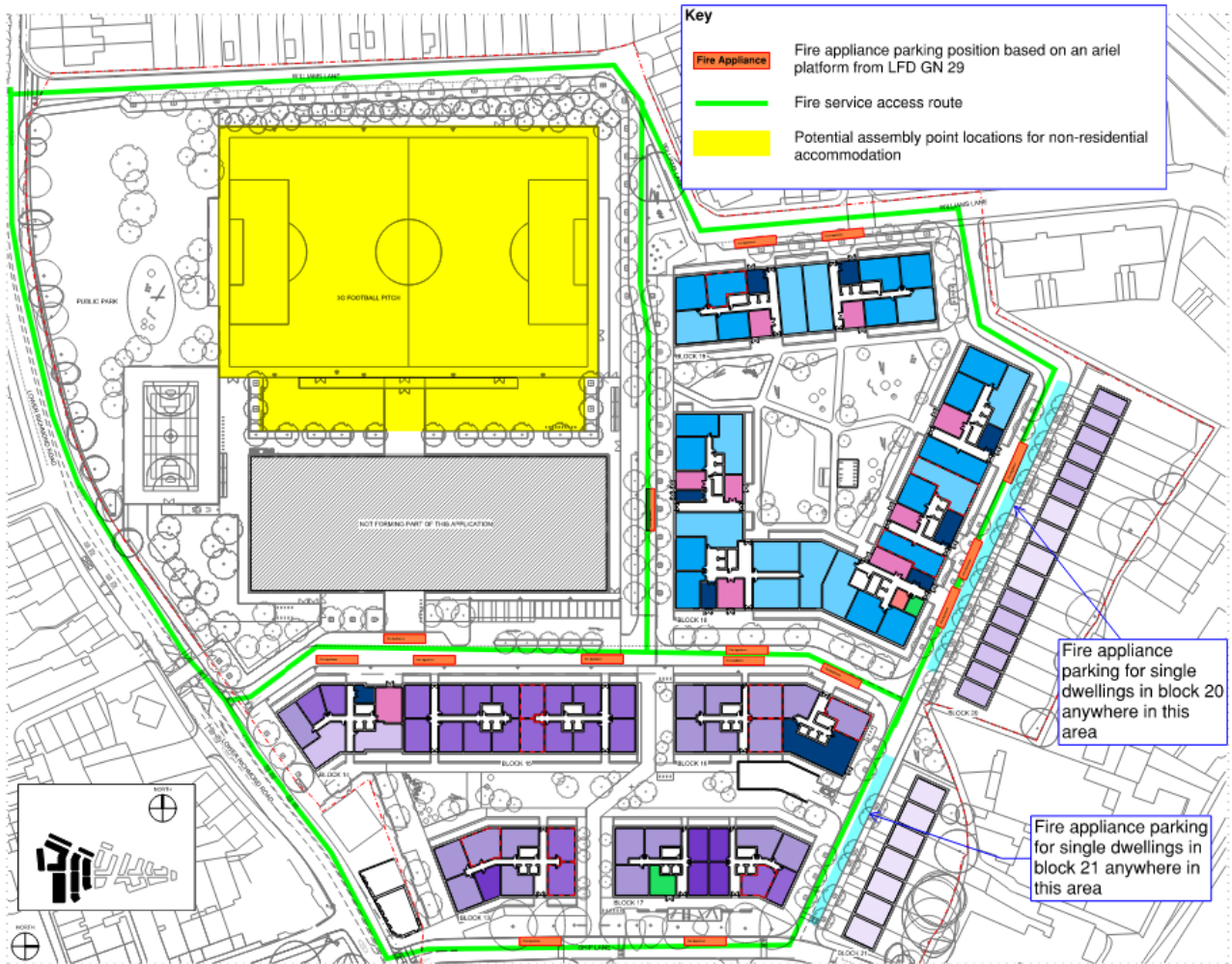


Figure 3: Fire service access around the proposed development area 2

5.6 Measures to protect the base build fire safety strategy

Any future modifications to the scheme or fit out will be subject to Building Regulations approval and should consider the base build fire strategy, such that fire safety measures are not compromised within the development.

This scheme consists of multiple apartment blocks and will be a highly managed development. The tenants will not be allowed to modify any passive and active fire protection measures implemented without consent of the building management. Furthermore a fire control centre has been recommended to be provided to the development to assist with the management of the site.

6. Conclusion.

This fire safety statement has been prepared to outline the approach and provisions relating to fire safety for the Stag Brewery development for compliance with The London Plan Policy D5 and D12.

This statement demonstrates that the proposals have considered fire safety at the earliest stage, and the further development of the fire strategy will be based upon these principles. The fire strategy will be further developed for submission to the Approving Authority at the appropriate time and will meet the functional requirements of the Building Regulations 2010, taking recommendations from BS 9999:2017, BS 9991:2015 and ADB Volume 2 and the requirements of Policy D5 and D12 of The London Plan.

Regulation 38 of the Building Regulations requires that fire safety information be given to the person responsible for the occupied building. Therefore, copies of the fire safety strategy, once agreed with the Approving Authority, and other relevant fire safety information should be issued to the responsible person. This will ensure publication of the proposed evacuation strategy and assist in evacuation of all building users.

Any future modifications to the scheme will be subject to Building Regulations approval and should consider the base build fire strategy.



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